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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,682	12/05/2003	Ezzeddine Hilal	S1022.81108US00	3164
23628	7590	03/02/2005	EXAMINER TAKAOKA, DEAN O	
WOLF GREENFIELD & SACKS, PC FEDERAL RESERVE PLAZA 600 ATLANTIC AVENUE BOSTON, MA 02210-2211			ART UNIT 2817	PAPER NUMBER

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/729,682	Applicant(s) HILAL ET AL.	
	Examiner Dean O. Takaoka	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/5/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed December 5, 2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the French Search Report from French Patent Application 02/15477 was not found in the file.

It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "two metallization levels" (claim 6) and the capacitor values ranging between "0.1pf and 10pf" and the central frequency ranging between "few tens of MHz and few tens of GHz" (claim 7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings do not show the limitations of claims 6 and 7. With respect to claim 6, the specification identifies two metallization levels formed by vias which is not shown (page 6, lines 16-18) where the drawings only show a planar or single level view

of the coupler. With respect to claim 7, the drawings do not show the capacitor values or the frequency range of the coupler.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Pavio (U.S. Patent No. 4,375,054).

Claim 1:

Pavio (Fig. 1) shows a distributed coupler comprising a first conductive line (4) carrying a main signal between two end terminals (12, 28) and a second conductive line (2) coupled to the first one between two terminals (20, 24) of which flows a sampled signal proportional to the main signal (e.g. coupled signal), two capacitors (32, 34) respectively connecting the two terminals of each of the lines.

Claim 2:

Where the lines (2, 4) have a same length ($1/8\lambda$ – col. 2, lines 7, 8).

Claim 3:

Where the capacitors have the same value (col. 3, line 48 to col. 4, line 3; where lines 2 and 4 are both equal, i.e. $\lambda/8$; where X_c equals Z_o or 50 ohms, thus inherently where the C values are equal).

Claim 4:

Where the lines are sized in $\lambda/4$ for a central band frequency greater than the frequency band for which the coupler is intended (where Pavio teaches downsizing the transmission line length of the couplers lines from $\lambda/4$ to $\lambda/8$ – col. 2, lines 6-10, thus where the coupler of Pavio inherently functions in the same manner comprising a downsized λ value (specification pages 5, lines 21-28)).

Claims 1, 2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith (U.S. Patent No. 3,593,208).

Claim 1:

Smith (Fig. 1) shows a distributed coupler comprising a first conductive line (31) carrying a main signal between two end terminals (1, 4) and a second conductive line (32) coupled to the first one between two terminals (2, 3) of which flows a sampled signal proportional to the main signal (e.g. coupled signal), two capacitors (33, 34) respectively connecting the two terminals of each of the lines.

Claim 2:

Where the lines have a same length (shown in Figs 3-5).

Claim 5:

Where each conductive line comprises at least two parallel sections between its end terminals, the sections of the two lines being interleaved (where in the case of Fig. 5 with respect to Fig. 1, capacitors 33, 34 and 39 are lumped or integrated with the first and second transmission lines – col. 3, lines 10-15, thus comprising part of the line, where 39, not comprising end capacitors 33 or 34, comprises a section of lines 31 and 32 and is interdigitated or interleaved).

Claims 1 – 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Ojha et al. (Reduced Size RF Coupler Design for Specialized Load Requirements), Applicant's prior art cited in the IDS dated December 5, 2003.

Claim 1:

Ojha et al. (Fig. 2) shows a distributed coupler comprising a first conductive line (to port 1) carrying a main signal between two end terminals (port 1 and grounded port) and a second conductive line (to port 2) coupled to the first one between two terminals (port 2 and port 3) of which flows a sampled signal proportional to the main signal (e.g. coupled signal), two capacitors (both labeled $C = 6.3\text{pf}$) respectively connecting the two terminals of each of the lines.

Claim 2:

Where the lines have a same length ($L = 255$).

Claim 3:

Where the capacitors have the same value ($C = 6.3\text{pf}$).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shumovich – shows a directional coupler with an interdigitated capacitor.

Kim – shows a prior art coupler with connected capacitors.

Gunton et al. – shows a directional coupler with interdigitated electrodes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O. Takaoka whose telephone number is (571) 272-1772. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2817

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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February 23, 2005